

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1/18

FIG. 1A

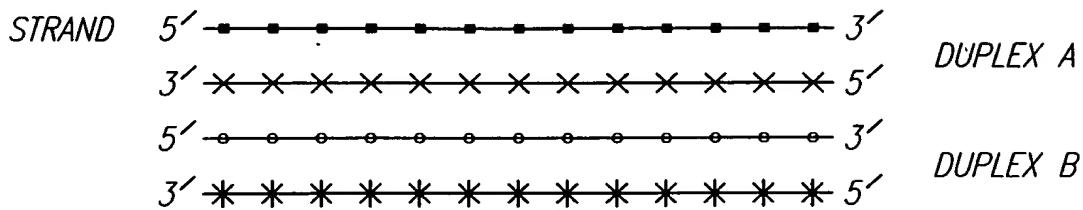


FIG. 1B

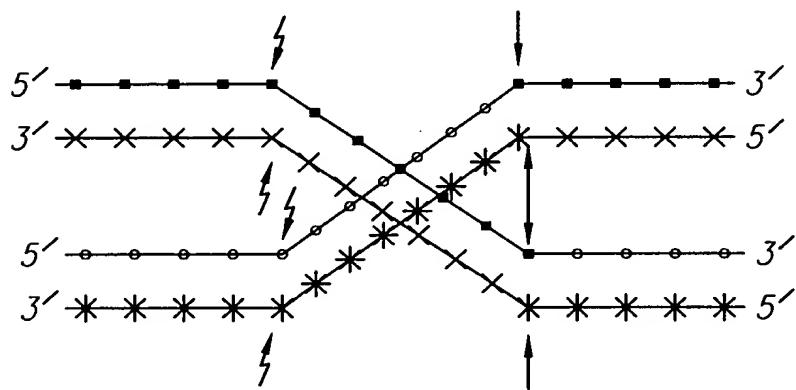
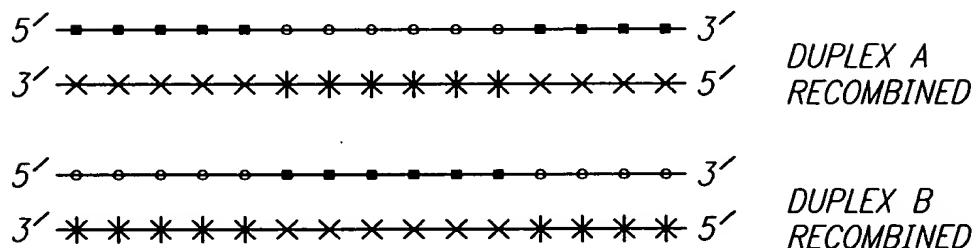


FIG. 1C



- 5' TO 3' DNA SEGMENT 1 > DUPLEX A
- × 3' TO 5' DNA SEGMENT 1
- 5' TO 3' DNA SEGMENT 2 > DUPLEX B
- * 3' TO 5' DNA SEGMENT 2

↓ STRAND BREAK + LIGATION

⚡ CUT SITE + LIGATION

APPROVED BY DRAFTSMAN	O.G. FIG.
	CLASS SUBCLASS

2/18

FIG. 2

IDENTIFICATION OF THE MUTATED SITE DNA SEQUENCE WITHIN THE GENE CONTROLLING THE DISEASE AND DYSFUNCTION

OBTAINING THE DNA SEQUENCE SURROUNDING THE MUTATED DNA SEQUENCE WHICH IS SUBSTANTIALLY HOMOLOGOUS TO THE NORMAL WILD TYPE DNA

GENERATING THE SHORT DNA FRAGMENTS CONTAINING THE NORMAL WILD TYPE DNA SEQUENCE FLANKED ON BOTH SIDES BY SEQUENCE HOMOLOGOUS TO THOSE FLANKING THE MUTATED SITE, BY PREPARING PRIMERS DERIVED FROM THE UPSTREAM AND DOWNSTREAM DNA SEQUENCES OF THE MUTATED SITE.

AMPLIFYING THE NORMAL SHORT FRAGMENT BY PCR.

INTRODUCING GENERATED SHORT FRAGMENTS INTO CELLS EXHIBITING MUTATED DNA BY TRANSFECTION USING MICROINJECTION, ELECTROPORATION, ETC.

INDUCING OR PROMOTING HOMOLOGOUS RECOMBINATION BY ENHANCING TRANSCRIPTIONAL ACTIVITY OF THE GENE OF INTEREST, USING HUMAN RECOMBINASES, STIMULATING CELL PROLIFERATION, AND/OR STIMULATING DNA REPLACEMENT ENZYMES.

DETERMINING THE FREQUENCY OF HOMOLOGOUS RECOMBINATION.

CONFIRMING THE CORRECTION OF THE GENE BY DETERMINING THE NORMAL FUNCTIONALITY.

INTRODUCING CELLS CONTAINING CORRECTED GENETIC DNA IN VIVO INTO PATIENTS' CELLS WHERE THEY UNDERGO NORMAL EXPRESSION CORRECTING THEREBY THE DYSFUNCTION OR DISEASES OR INTRODUCING DNA FRAGMENTS INTO CELLS IN VIVO BY LIPOSOME-MEDIATED DNA TRANSFER.

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSHAH		

3/18

FIG. 3

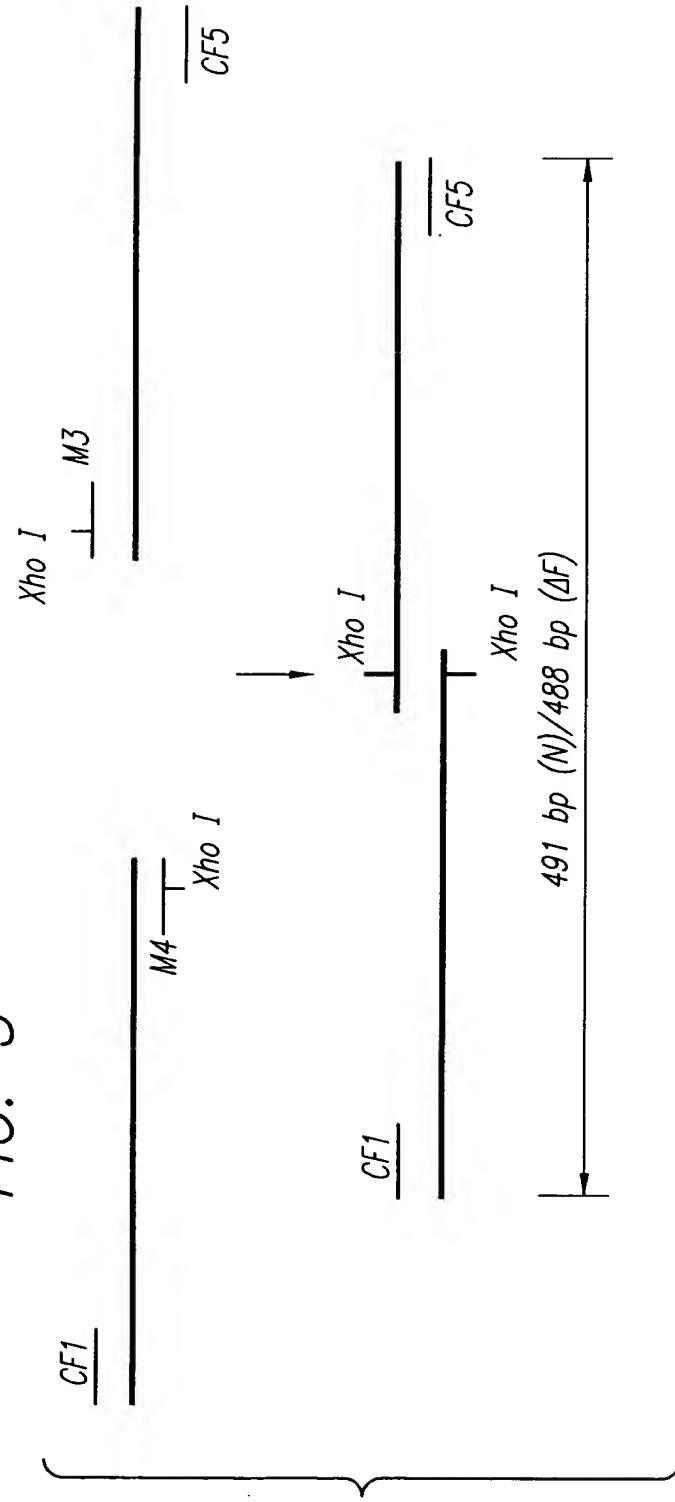
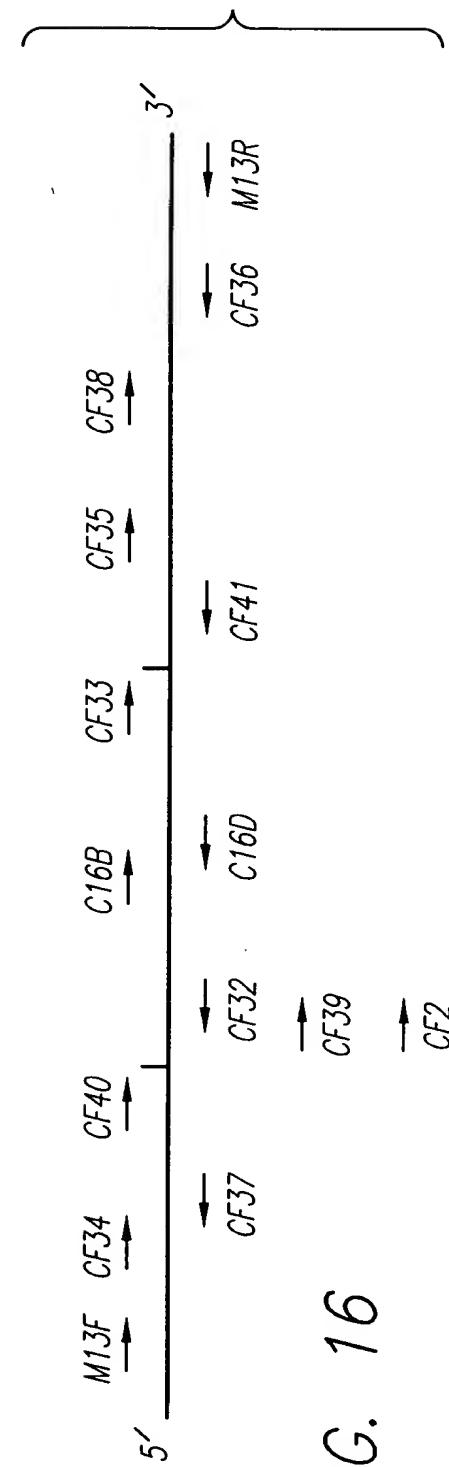


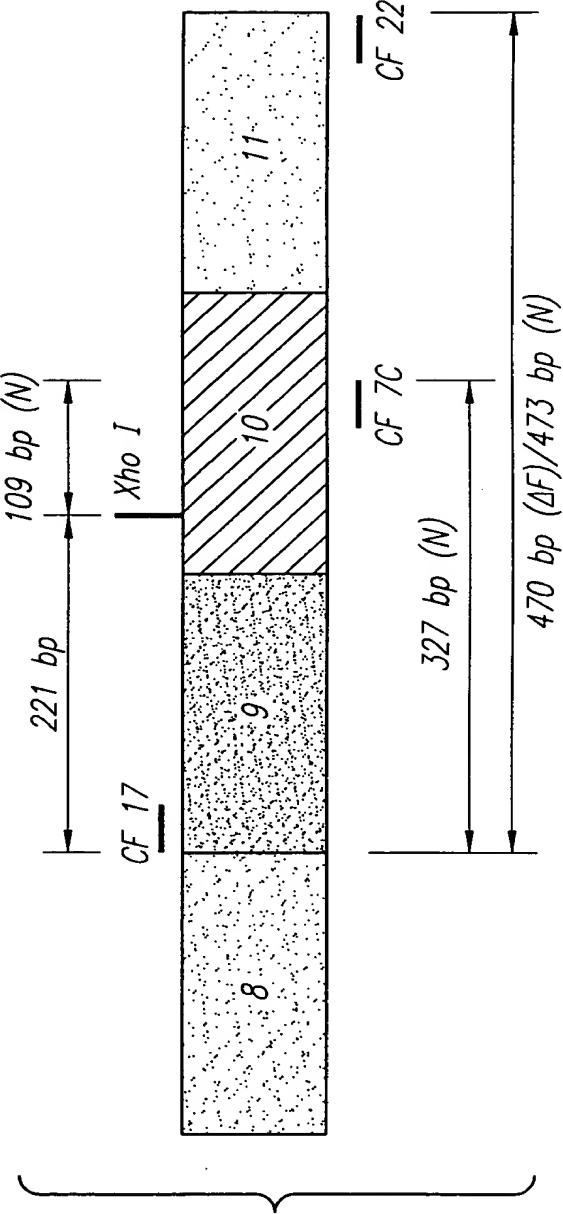
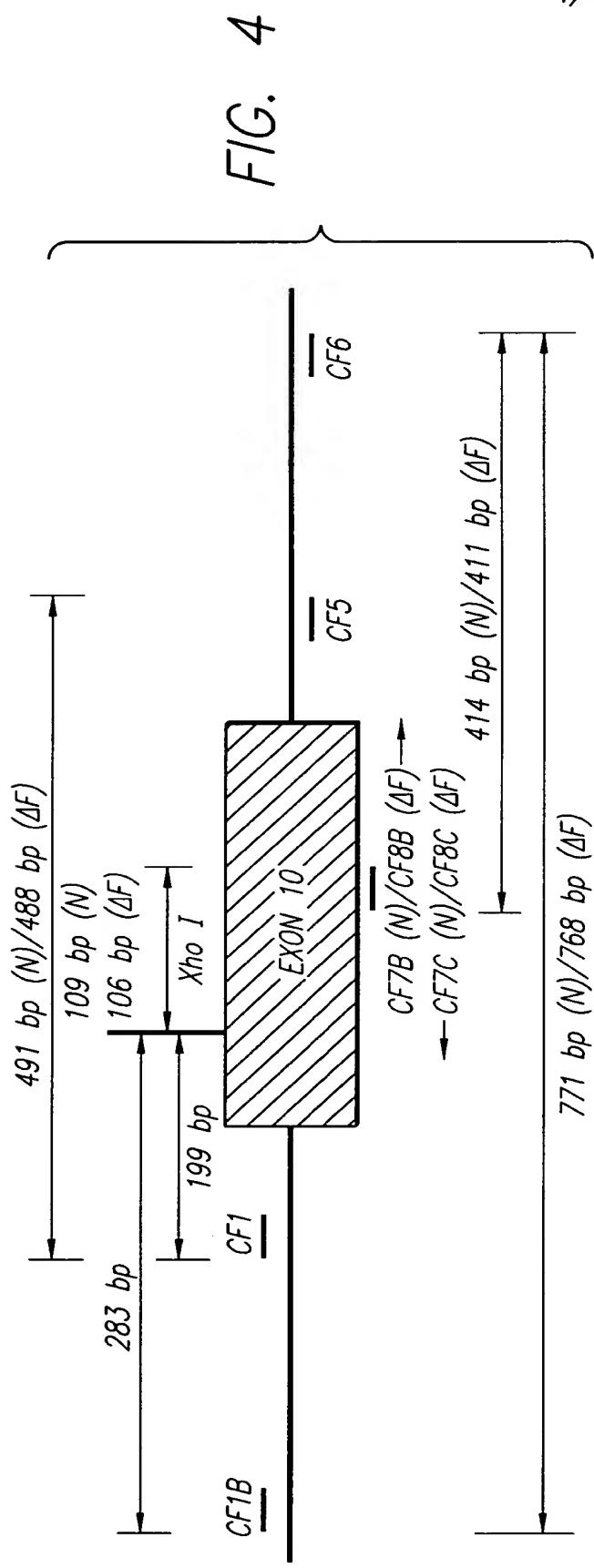
FIG. 16



Digitized by srujanika@gmail.com

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

4/18



0020206922 0020206922

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

5/18

FIG. 6A

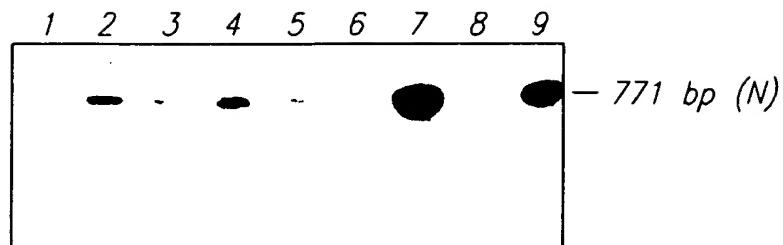


FIG. 6B

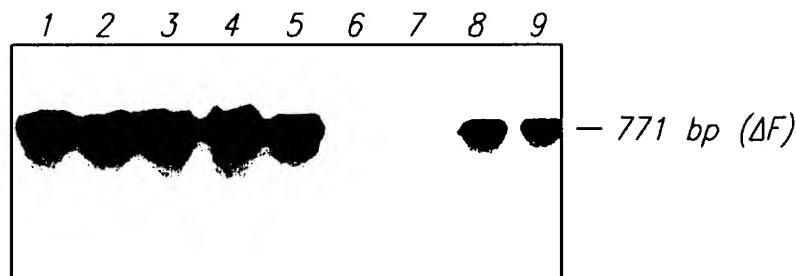


FIG. 7A

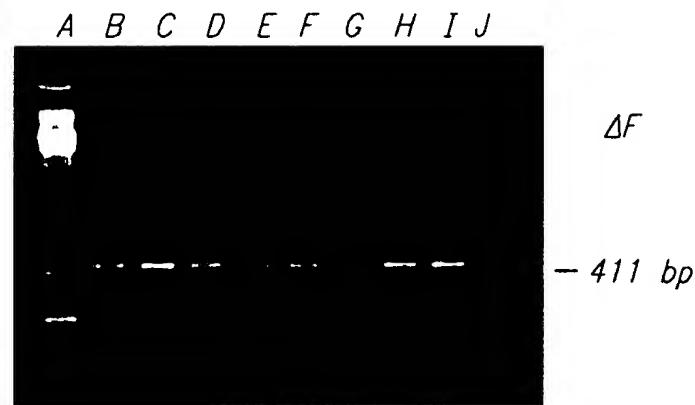
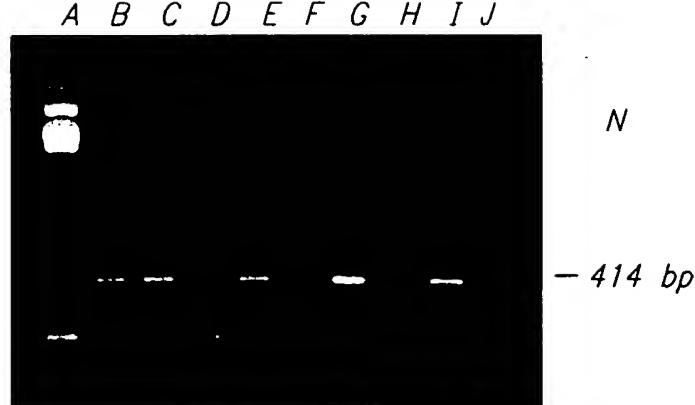


FIG. 7B



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

6/18

FIG. 8A

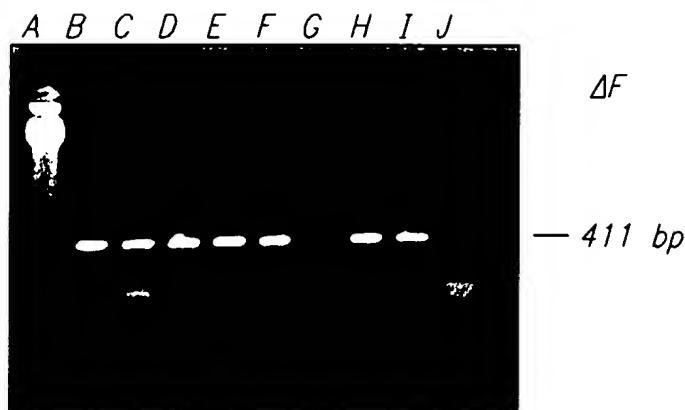
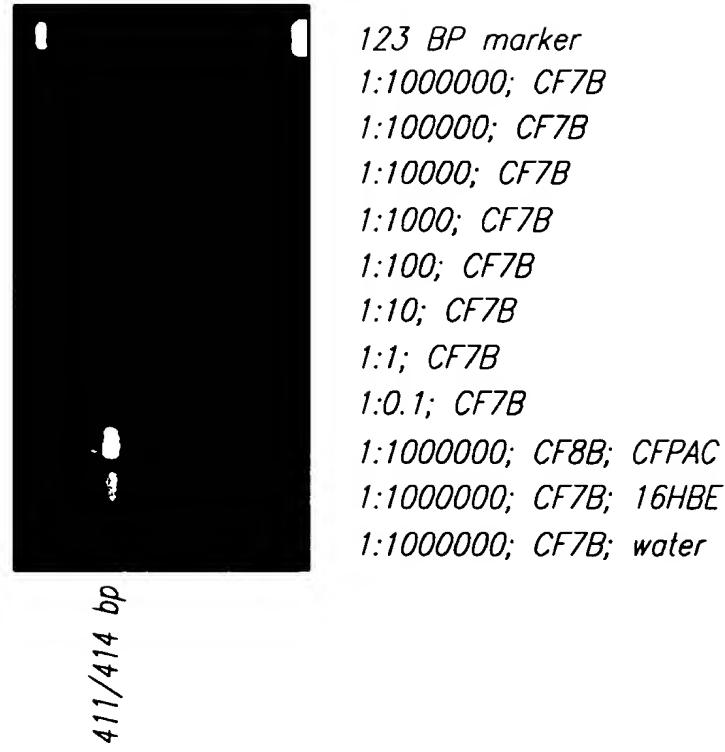


FIG. 8B



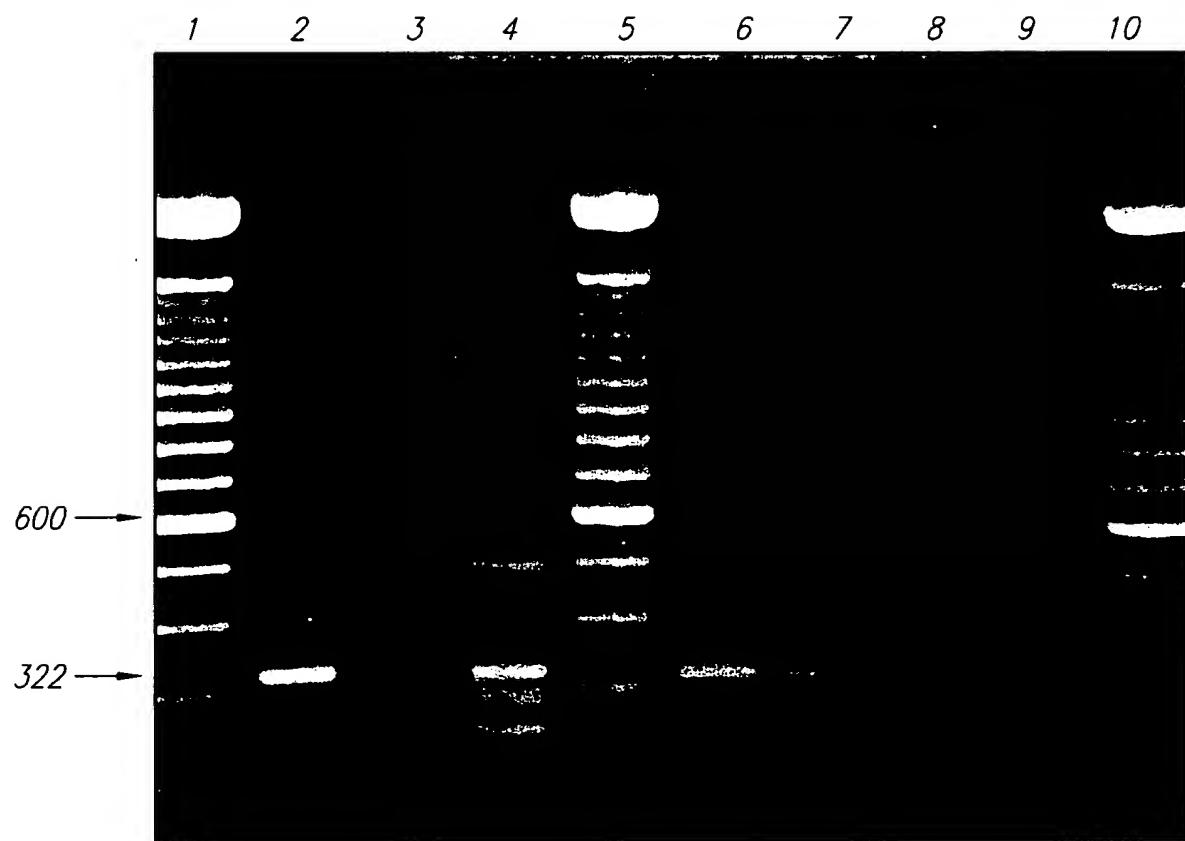
FIG. 9



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
RAFTSMAN		

7/18

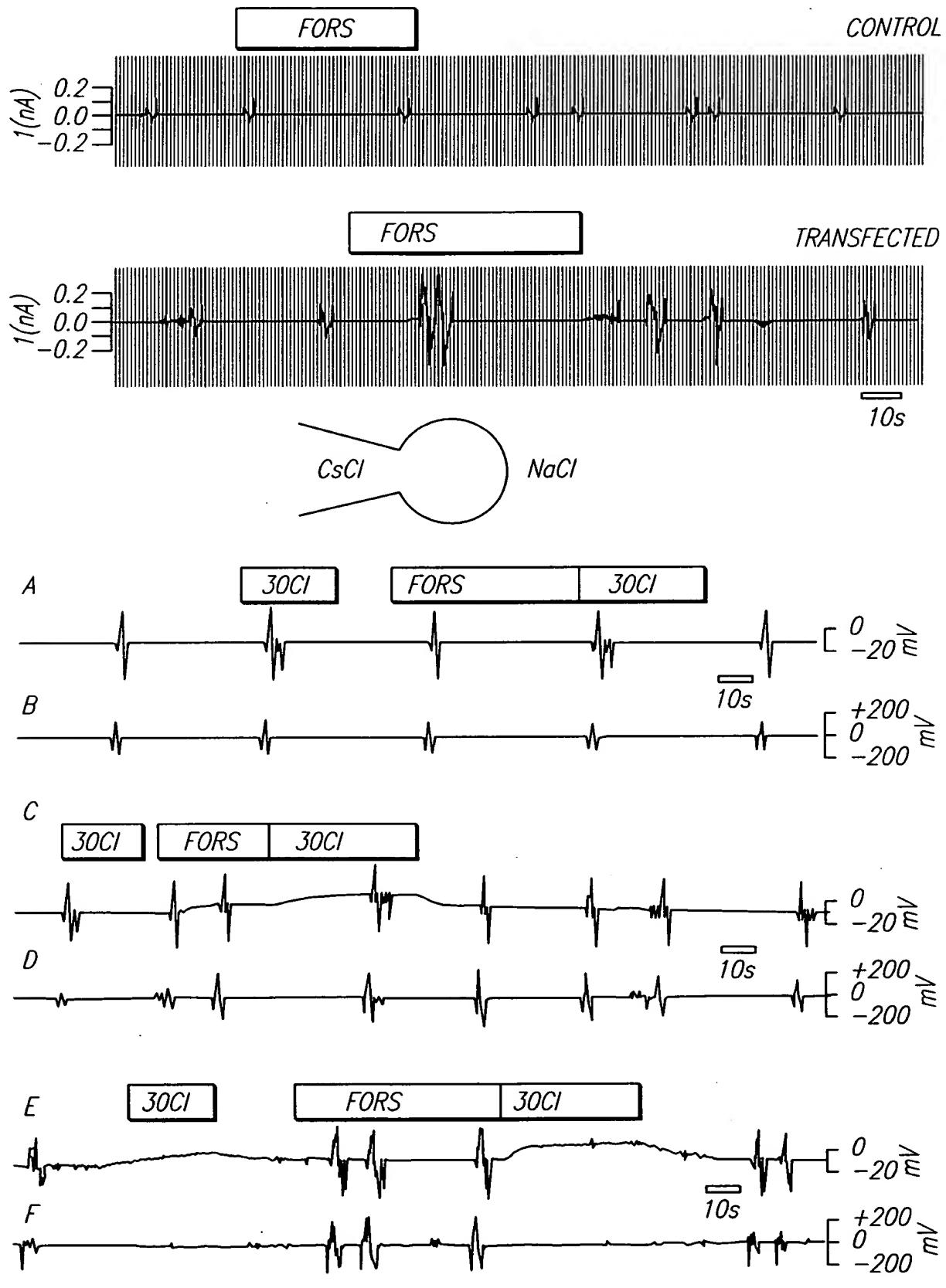
FIG. 10



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

8/18

FIG. 11



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSHAN		

9/18

FIG. 12

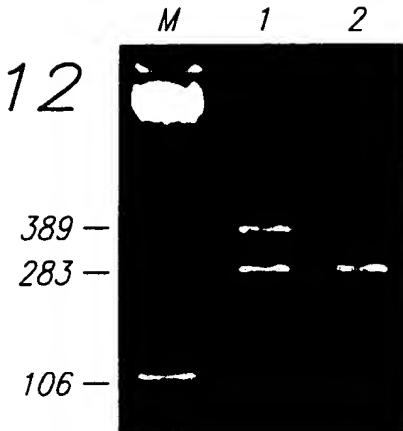
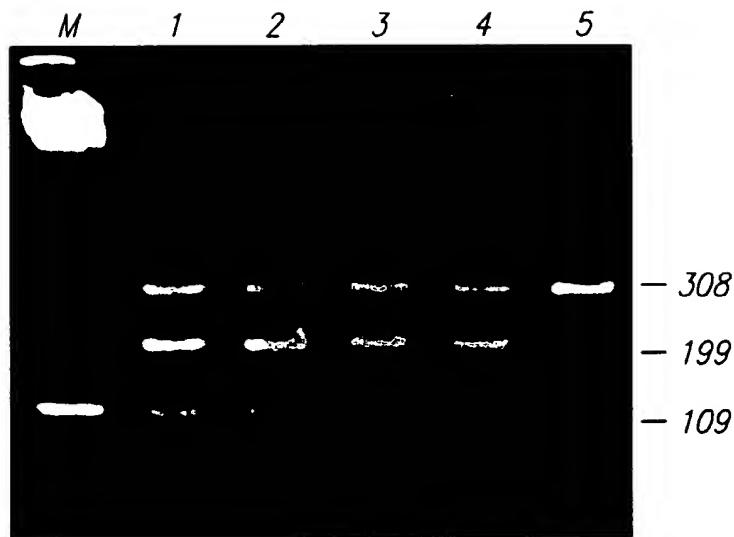


FIG. 13



FIG. 14



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

10/18

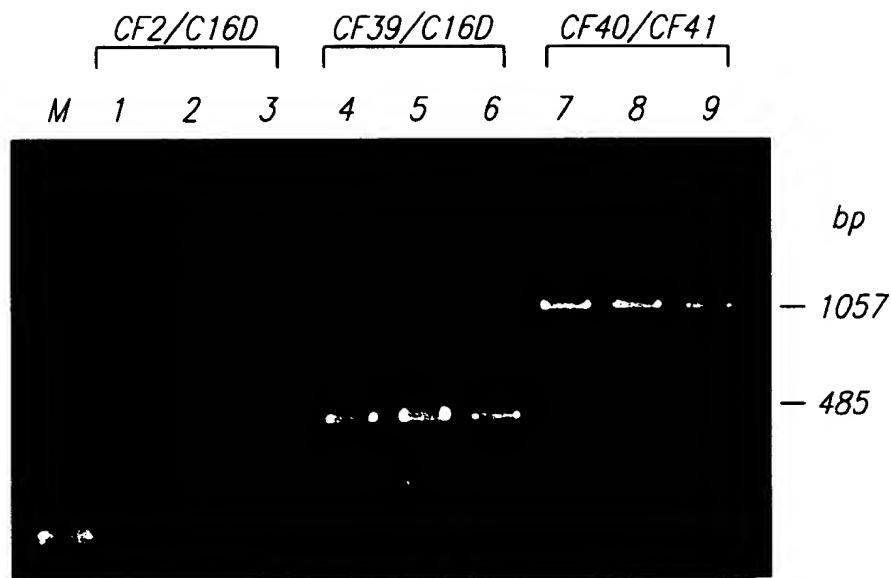
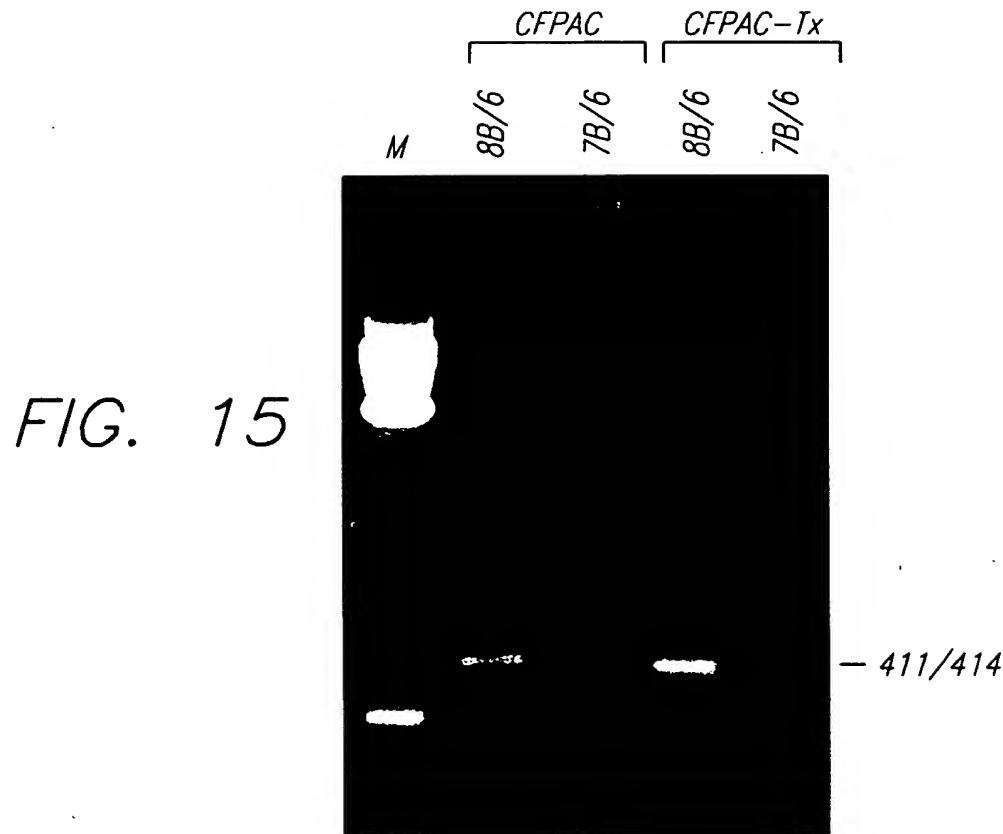


FIG. 17

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

11/18

FIG. 18

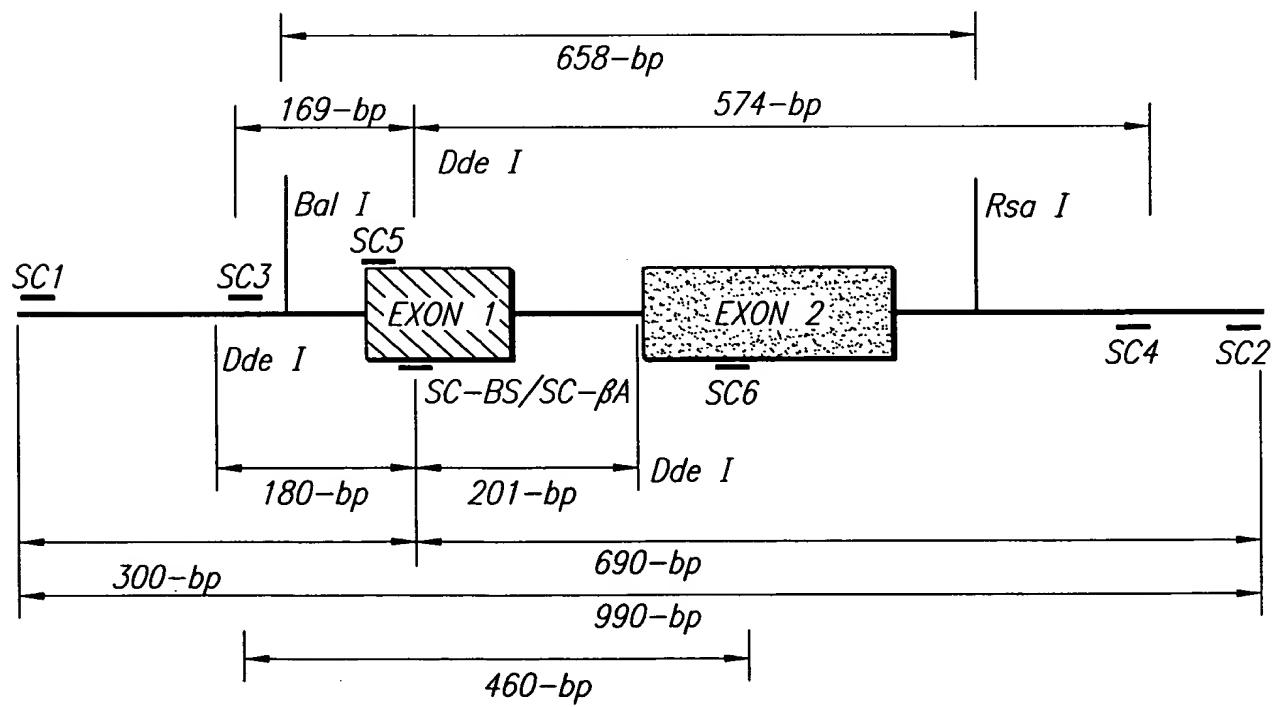
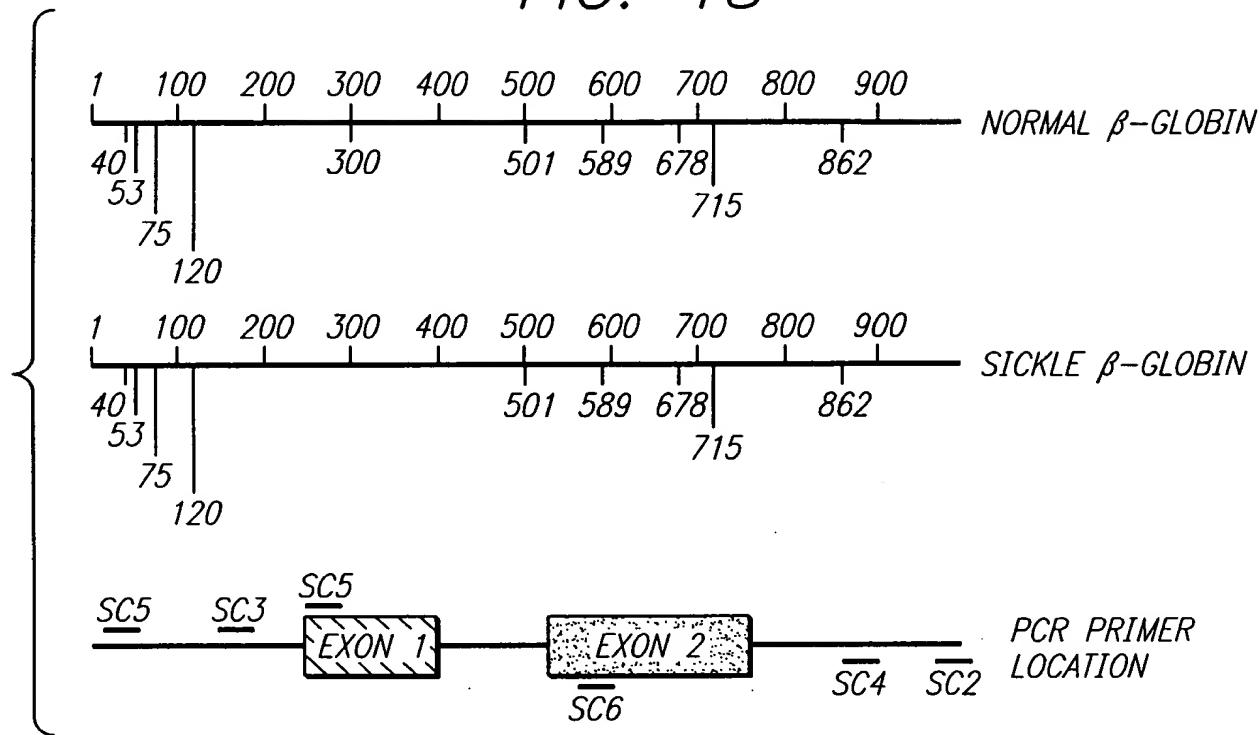


FIG. 19

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

12/18

FIG. 20

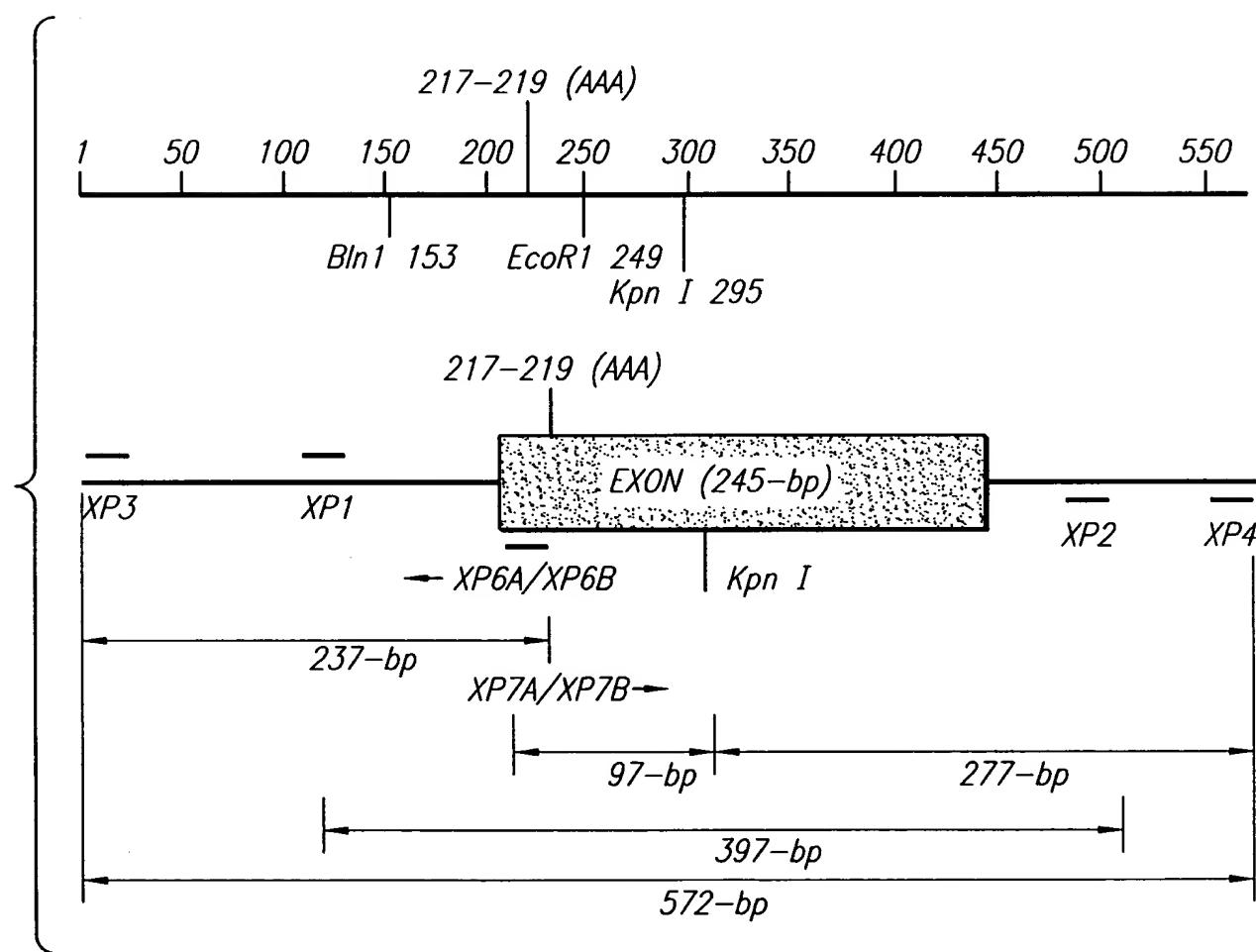
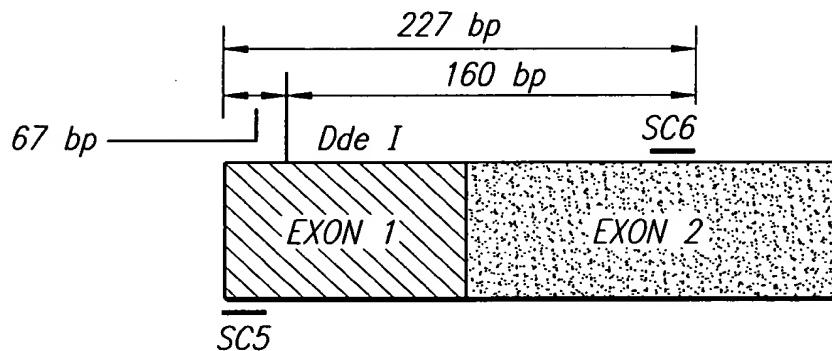


FIG. 21

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

13/18

FIG. 22

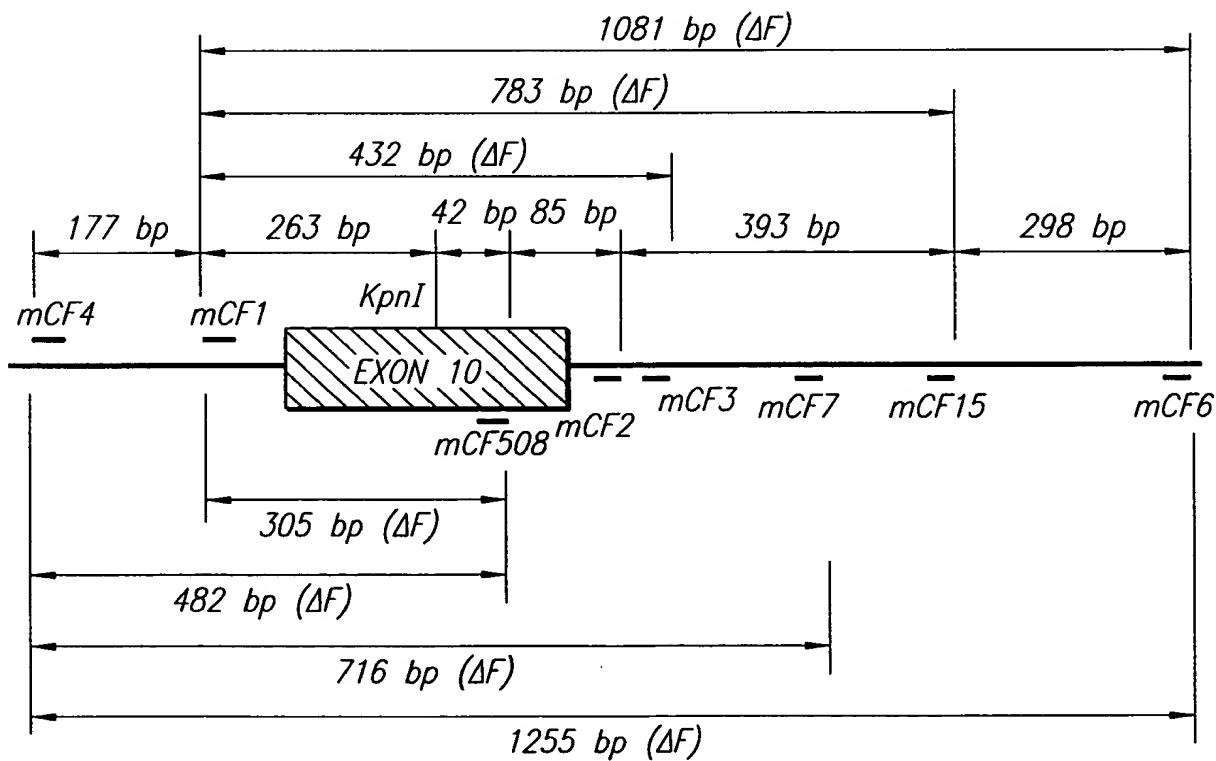
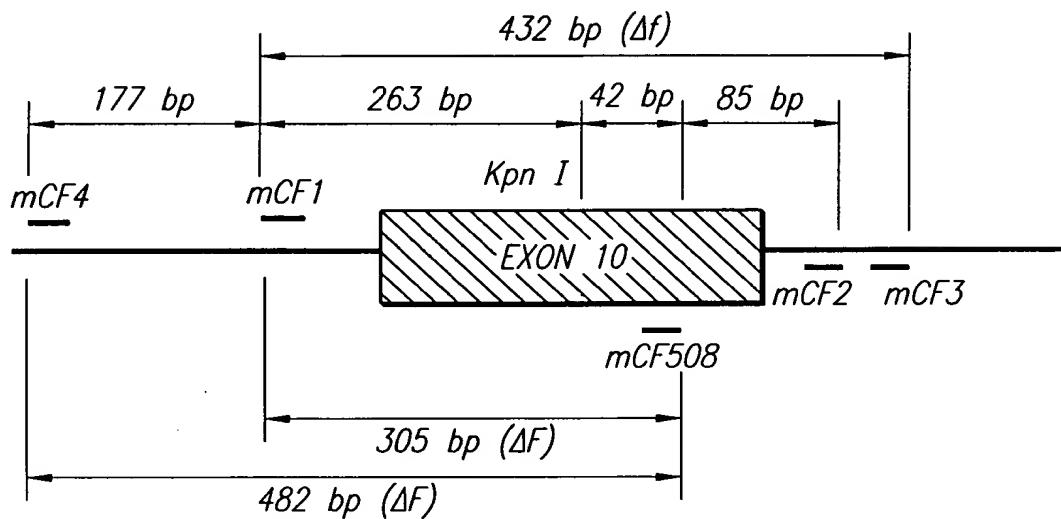
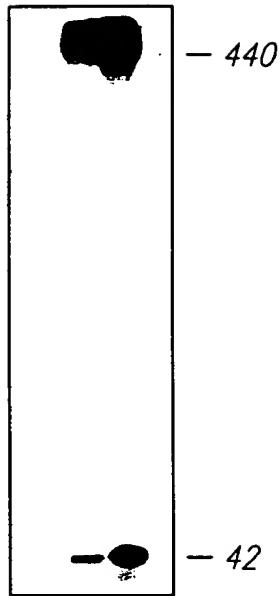


FIG. 23

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

14/18

FIG. 24



A B C D E F G H I J

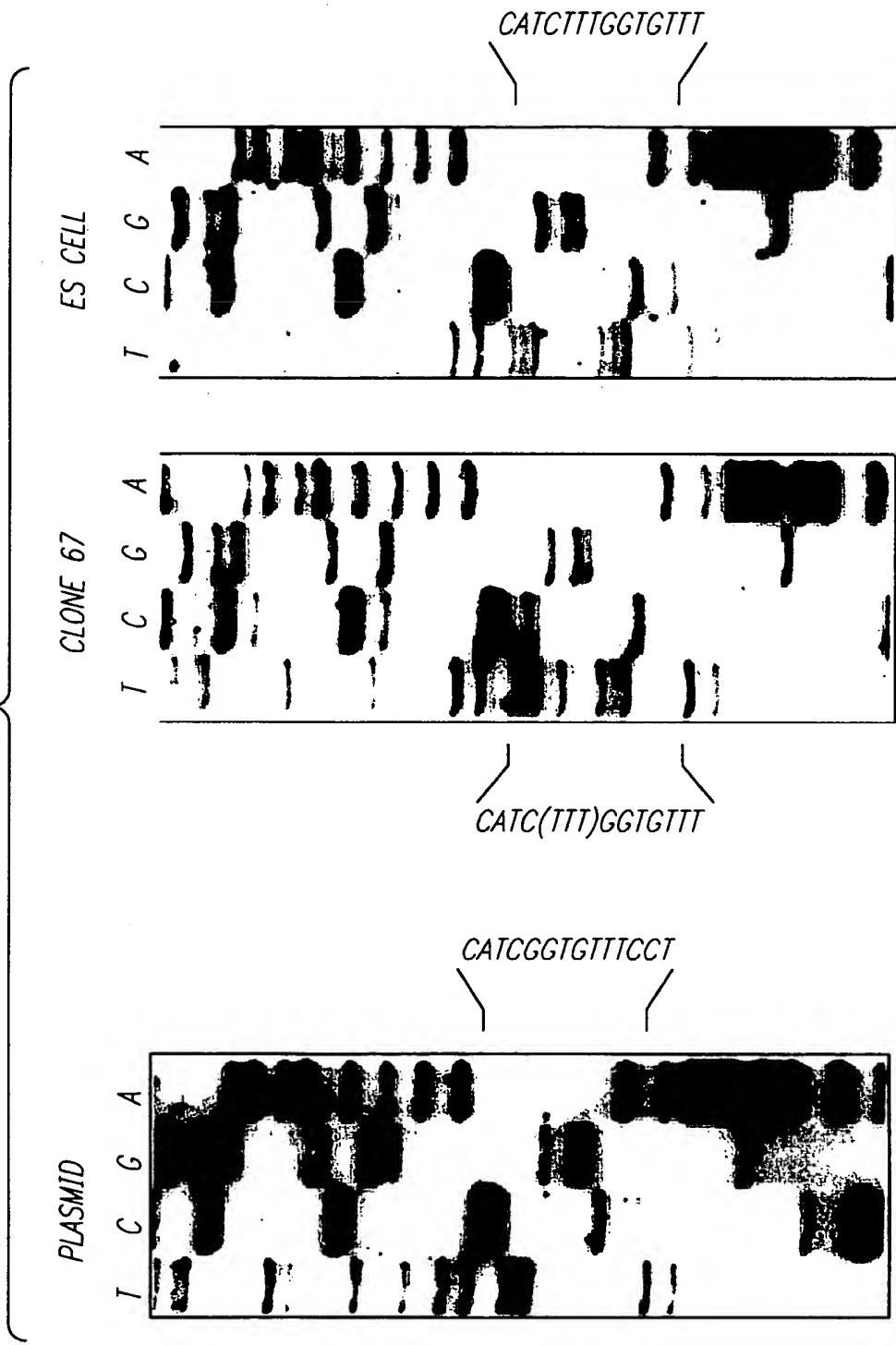


FIG. 25

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

15/18

FIG. 26



SEQ ID NO:87

SEQ ID NO:86

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSHAN		

16/18

FIG. 27

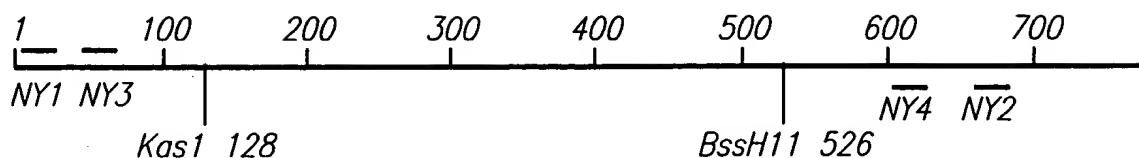


FIG. 28

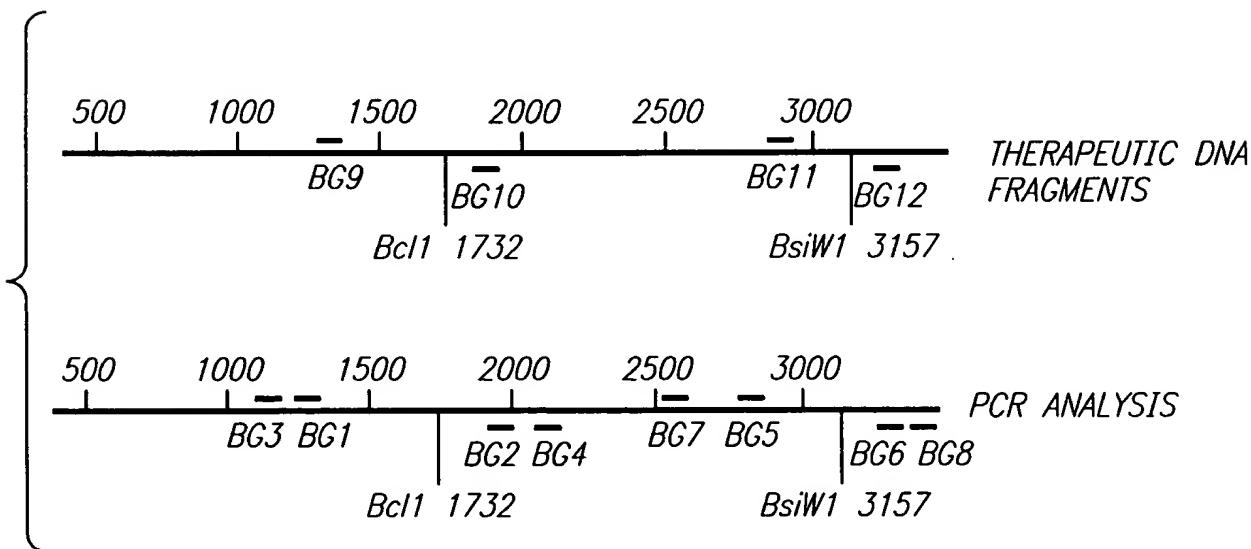
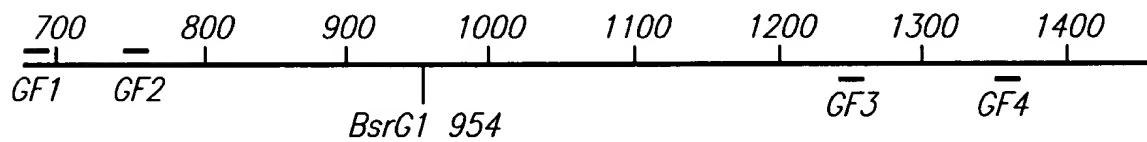


FIG. 29

APPROVED BY DRAFTSHAN	O.G. FIG.
	CLASS SUBCLASS

17/18

FIG. 30A

GAATTCCAGC CAGACGTGAT GGCGGGTGCC CGTAGTCCC GCTACTCGGG AGGCTGAGGC	60
AGGAGAATGG CGTGAACCCA GGAGGCAGAA CTTGCAGTGA GCCGAGATCG CGCCACTGCA	120
CTCTAGCCTG GGTGACAGAG TGAGACTCTG TCTCTAAATA AATAAATAAA TAAATAAATA	180
<u>AATAAATAAA</u> ATCACTGCTT TTTCTTCCTC TGCTACCTCC TTTCTTCTA CTCAGTTTA	240
GTCAGTAGTA TTATCTTTT TCAGATTAT CTTTGTATTG TTAAATCTGC TTATGCTTCT	300
ATTACTTTAT TTATTAGCTT TAAATGATAC CTTTGACTT TCAGCTTTTC TTAATAAAGC	360
AATCAGCAAA TTTCCTTAC ACTCCACACT TATACCCCAT TTCCCTTGTT TGTGTATTTG	420
GTTTTACTT CTAACTTTTC TTATTGTCAG GACATATAAC ATATTTAAC TTTGTTTTTC	480
AACTCGAATT CTGCCATTAG TTTTAATTT TGTTCACAGT TATATAAATC TTTGTTCACT	540
GATAGTCCTT TTGTACTATC ATCTCTTAAA TGACTTTATA CTCCAAGAAA GGCTCATGGG	600
AACAATATTA CCTGAATATG TCTCTATTAC TTAATCTGTA CCTAATAATA TGAAGGTAAT	660
CTACTTTGTA GGATTTCTGT GAAGATTAAA TAAATTATA TAGTTAAAGC ACATAGAACAA	720
GCACTCGACA CAGAGTGAGC ACTTGGCAAC TGTTAGCTGT TACTAACCTT TCCCATTCTT	780
<u>cactgttagct</u> <u>gtactacctt</u> <u>ccat</u>	
<u>CCTCCAAACC</u> TATTCCA <u>ACT</u> ATCTGAATCA TGTGCC <u>CTT</u> CTCTGTGAAC CTCTATCATA	840
<u>ctccctc</u>	
ATACTTGTC AACTGTATTG TAATTGTCTC TTTTACTTTTC CCTTGATCT TTTGTGCATA	900
.....	
GCAGAGTACC TGAAACAGGA AGTATTTAA ATATTTGAA TCAAATGAGT TAATAGAAC	960
.....	
TTTACAAATA AGAATATACA CTTCTGCTTA GGATGATAAT TGGAGGCAAG TGAATCCTGA	1020
.....	
GCGTGATTTG ATAATGACCT AATAATGATG GGTTTTATT CCAGACTTCA CTTCTAATGA	1080
.....	
TGATTATGGG AGAACTGGAG CCTTCAGAGG GTAAAATTAA GCACAGTGGA AGAATTTCAT	1140
.....	
TCTGTTCTCA GTTTCCCTGG ATTATGCCTG GCACCATTAA AGAAAATATC ATCTTTGGTG	1200
.....	
TTTCCTATGA TGAATATAGA TACAGAACGCG TCATCAAAGC ATGCCAACTA GAAGAGGTAA	1260
.....	
GAAACTATGT GAAA <u>ACTTTT</u> TGATTATGCA TATGAACCCT TCACACTACC CAAATTATAT	1320
.....	
ATTTGGCTCC ATATTCAATC GGTTAGTCTA CATATATTAA TGTTCCCTCT ATGGGTAAGC	1380
.....	
TACTGTGAAT GGATCAATTAA ATAAAACACA TGACCTATGC TTTAAGAACGC TTGCAAACAC	1440
.....	
ATGAAATAAA TGCAATTAA TTTTTAAATA ATGGGTTCAT TTGATCACAA TAAATGCATT	1500
.....	
TTATGAAATG GTGAGAATT TGTCACTCA TTGAGTGAGAC AAACGTC <u>CTC</u> AATGGTTATT	1560
.....	
TATATGGCAT GCATATA <u>AGT</u> GATATGTGGT ATCTTTAA AAGATACCAAC AAAATATGCA	1620
.....	
TCTTTAAAAA TATACTCCAA AAATTATTA GATTATTTA ATAATTTAA TAATACTATA	1680
GCCTAATGGG ATGAGCATTG ATCTGCCAGC AGAGAATTAG AGGGGTAAAA TTGTGAAGAT	1740
ATTGTATCCC TGGCTTGAA CAAATACCAT ATAACCTCTA GTGACTGCAA TTCTTTGATG	1800
CAGAGGCAAA ATGAAGATGA TGTCATTACT CATTCAACAA CAATATTGGA GAATGAGCTA	1860

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

18/18

FIG. 30B

ATTATCTGAA	AATTACATGA	AGTATTCCAA	GAGAAACCA	TATATGGATC	TTGTGCTGTT	1920
CACTATGTAA	ATTGTGTGAT	GGTGGGTTCA	GTAGTTATTG	CTGAAATGT	TAGGGCAGGG	1980
CAATATGTTA	CTATGAAGTT	TATTGACAGT	ATACTCCAA	TAGTGTGTTGT	GATTCAAAAG	2040
CAATATCTTT	GATAGTTGGC	ATTTGCAATT	CCTTTATATA	ATCTTTATG	AAAAAAAATTG	2100
CAGAGAAAGT	AAAATGTAGC	TTAAAATACA	GTATCCAAA	AAATGGAAAA	GGGCAAACCG	2160
TGGATTAGAT	AGAAATGGCA	ATTCTTATAA	AAAGGGTTGC	ATGCTTACAT	GAATGGCTTT	2220
CCATGTATAT	ACTCAGTCAT	TCAACAGTTT	TTTTTTAGA	GCCCCATCCT	TATTTTTTAT	2280
ACACTTGAG	AGCATAATGA	AAAGAAAAGC	TACCTGCAAA	AGTTTTGGAC	TTACCTCAA	2340
GAGGATATAC	TACATTCCCTC	AAAAGGCCCT	CTTCCAGGAA	TAGTATTTCA	TAACCTGGAG	2400
GTTGGAAAAA	TCTGGATTAG	TTACAAAAAA	ATCTGAGTGT	TTCTAGCGGA	CACAGATATT	2460
TGTCTAGGAG	GGGACTAGGT	TGTAGCAGTG	GTAGTGCCTT	ACAAGATAAA	TCATGGGCTT	2520
TATTTACTTA	CGAGTGGAAA	AGTTGCGGAA	GGTGCCTTAC	AGACTTTTT	TTTGCCTTAA	2580
GTATGTGTTT	TCCCAGTAGGA	ATTAATTAT	AAATGGTGGT	TTGATTTCT	CAAGTCACC	2640
TTTAAAGTA	TATTTAGCCA	AAATATAGCT	AAATATATT	ACTAGTAATA	AATTTAGTAC	2700
TGTGGGTCTC	TCATTCTCAA	AATGAGCATT	TACTAATTTC	TGAACACTGT	GCTAGGTCCT	2760
GGGAATACCA	AATTGAATAA	GACATAGTCT	ATTTTCTGA	AGGGTTTATA	GCAGAGTCCC	2820
ATAATGAAAA	AAGGAGAAGA	GGGAATTG				2908